

REMARKS

This is in response to the Office Action of September 12, 2007. Claims 1, 2, 4, 5, and 7-9 are pending in the application. A non-narrowing, typographical correction is made to claim 1. Specifically, a semicolon (;) is changed to a colon (:). No new matter is introduced by this Amendment.

Indication of allowability

Applicant gratefully acknowledges the Examiner's indication, on page 5 of the Office Action, that claims 7 and 8 are allowable in substance.

Prior art rejection

Claims 1, 2, 4, 5, and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over GB 1,533,124 ("Showa Denko"), alone or in view of EP 0 283 719 A2 ("Hara"). Office Action, pages 2-5. The rejection is respectfully traversed.

The polymerizable composition of Applicant's claim 1 is a polymerizable composition that comprises a cycloolefin monomer, a flame retardant, and a metathesis polymerization catalyst. A monomer having a condensed ring made up of an aliphatic ring having one or more carbon-carbon double bonds and an aromatic ring is used as at least some of the cycloolefin monomer component. This specified monomer is contained in an amount of 10 % by mass or more with respect to all of the cycloolefin monomers in the polymerizable composition.

The Examiner contends that Showa Denko discloses: Example 48, in which 1,4-dihydro-1,4-methanonaphthalene, which corresponds to the cycloolefin monomer of the present invention, is taught to be used at a ratio of 1 mol %; and Examples 57 and 58 wherein monomer B, which does not correspond to the cycloolefin monomer of the present invention, is used at a ratio of 40 mol %. Monomer B is generally used at a ratio of about 50 mol %.

The polymerizable composition of Applicant's claim 1 is characterized by comprising a monomer that has a condensed ring made of an aliphatic ring having one or more carbon-carbon

double bonds and an aromatic ring used as a significant portion of the cycloolefin monomer. This specified monomer is contained in an amount of 10 % by mass or more with respect to all of the cycloolefin monomers in the claimed polymerizable composition. This very significant characteristic of the present invention enables the present invention to employ decreased amounts of flame retardant, and to improve the moldability of the polymerizable composition at the time of forming a molded product using the polymerizable composition. These remarkable effects of the polymerizable composition recited in Applicant's claim 1 are achieved only *by using* the monomer having a condensed ring made of an aliphatic ring having one or more carbon-carbon double bonds and an aromatic ring as the cycloolefin monomer *and by setting* the content of that monomer to 10 % by weight or more with respect to all of the cycloolefin monomers in the polymerizable composition.

In order to prove this point, Applicant encloses herewith a second Declaration under 37 CFR 1.132 of Shigeru Fujita, executed on 11 January 2008. (The first Declaration of Shigeru Fujita was included with the Amendment filed July 9, 2007.)

The 11 January 2008 Fujita Declaration describes experiments in which 1,4-dihydro-1,4-methanonaphthalene, disclosed in Example 48 of Showa Denko – which corresponds to the “monomer having a condensed ring made of an aliphatic ring having one or more carbon-carbon double bonds and an aromatic ring” of the present invention – is used as the cycloolefin monomer. The Declaration shows in Experiment 1 a case wherein 1,4-dihydro-1,4-methanonaphthalene is contained in a ratio of less than 10 % by weight with respect to all of the cycloolefin monomers, which is outside the range recited in Applicant's claim 1. The Declaration shows in Experiment 2 a case wherein 1,4-dihydro-1,4-methanonaphthalene is contained in a ratio of more than 10 % by weight with respect to all the cycloolefin monomers. This case is inside the range recited in Applicant's claim 1. As is established by the reported results, the advantageous effects of the present invention are not achieved merely by using 1,4-dihydro-1,4-methanonaphthalene as the cycloolefin monomer. Although Experiments 1 and 2 both used 60 grams of flame retardant, Experiment 1 used 100 grams of monomers while Experiment 2 used 200 grams of monomers. Thus, on a relative basis, Experiment 2 –

corresponding to Applicant's invention – used 50% as much flame retardant as did Experiment 1 – corresponding to Showa Denko.

The Fujita Declaration reports test results on molded products obtained in Experiments 1-3. In a vertical flame test conducted on the molded product obtained in Experiment 1, the flaming time was 30 seconds or more, and thus the molded product of Experiment 1 was evaluated as being of rejectable quality. In a vertical flame test conducted on the molded product obtained in Experiment 2, the molded product of Experiment 1 was evaluated as having the highest level of flame retardance. In a vertical flame test conducted on the laminate obtained in Experiment 3, the flaming time was 30 seconds or more, and thus the laminate of Experiment 1 was evaluated as being of rejectable quality.

Examples 57 and 58 in Showa Denko do not use the “monomer having a condensed ring made of an aliphatic ring having one or more carbon-carbon double bonds and an aromatic ring” as the cycloolefin monomer. Therefore, Experiment 3 in the 11 January 2008 Fujita Declaration, which is representative thereof, did not achieve the beneficial results provided by the present invention. Moreover, in Example 48 disclosed in Showa Denko, the “monomer having a condensed ring made of an aliphatic ring having one or more carbon-carbon double bonds and an aromatic ring” is used as the cycloolefin monomer, but the content thereof is outside the range set in claim 1. Accordingly, Example 48 also cannot provide the beneficial effects provided by the present invention.

It is clear from the Fujita Declaration enclosed herewith that the unique effects of decreasing the amount of the flame retardant used and of improving the moldability of the polymerizable composition at the time of forming a molded product using the polymerizable composition are achieved by setting the amount of cycloolefin monomer used with the range recited in Applicant's claim 1.

In summary, none of the examples disclosed in the Showa Denko reference achieves the effects of decreasing the amount of flame retardant used and of improving the moldability of the polymerizable composition at the time of forming a molded product using the polymerizable composition. Therefore, a person of ordinary skill in the art would not find the polymerizable

composition of Applicant's claim 1 obvious over Showa Denko. The Hara reference does not remedy these deficiencies of the Showa Denko disclosure.

It is clear from the above that independent claim 1, and claims 2, 4, 5, and 9 (as well as allowable claims 7 and 8) which depend therefrom, recite inventions that are neither taught nor suggested by the Showa Denko reference or the Hara reference, alone or in combination. Withdrawal of the rejection of record is earnestly solicited.

Contact information

If there are any questions concerning this application, the Examiner is invited to contact Richard Gallagher (Registration No. 28,781) at (703) 205-8008.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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